



EFX SPO

Expeditionary Force



EXperiment

EFX Program Office (ESC/FX)



Overview



EFX SPO

- ◆ EFX Mission
- ◆ Hypothesis - Advanced C2 ➡ Decisive Force
- ◆ Premises - Achieving Decisive Force
- ◆ Integrating the C2 Environment
- ◆ EFX 98 - Providing the Integrated C2 Framework
- ◆ Options for funding
- ◆ Summary

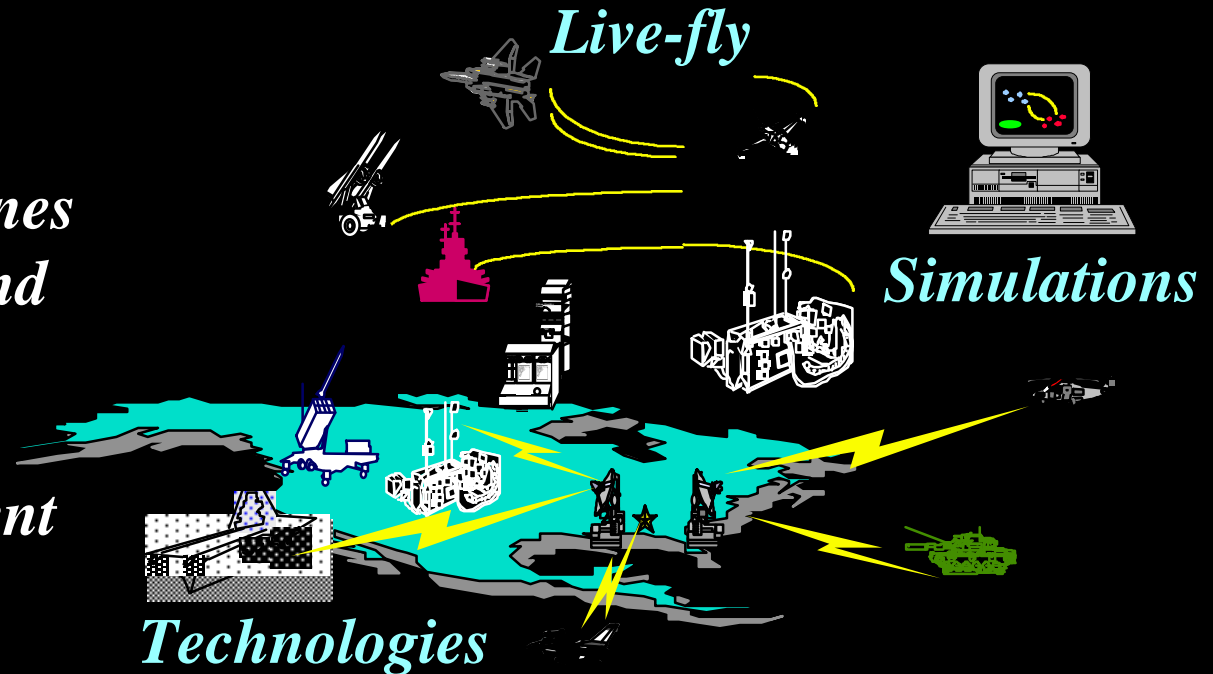


The EFX Mission



EFX SPO

*CSAF - sponsored
MAJCOM - executed
experiment that combines
live-fly, simulations, and
technologies insertion
into a seamless
warfighting environment
to rapidly evolve and
mature:*



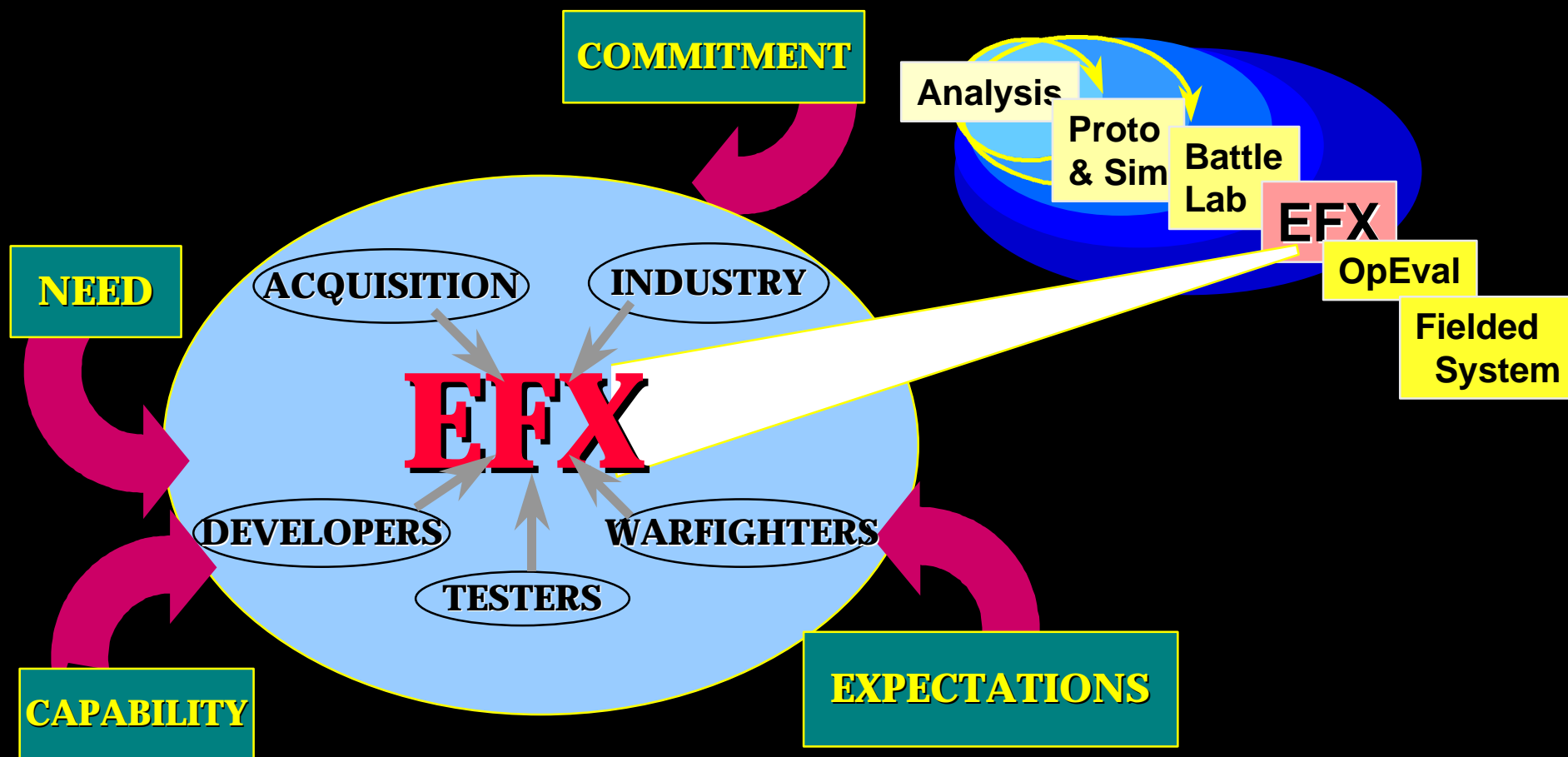
- ♦ *AF Core Competencies*
- ♦ *Applications of decisive Air & Space Power*
- ♦ *Dramatically improved C2 capabilities*



How EFX “Fits”



EFX SPO



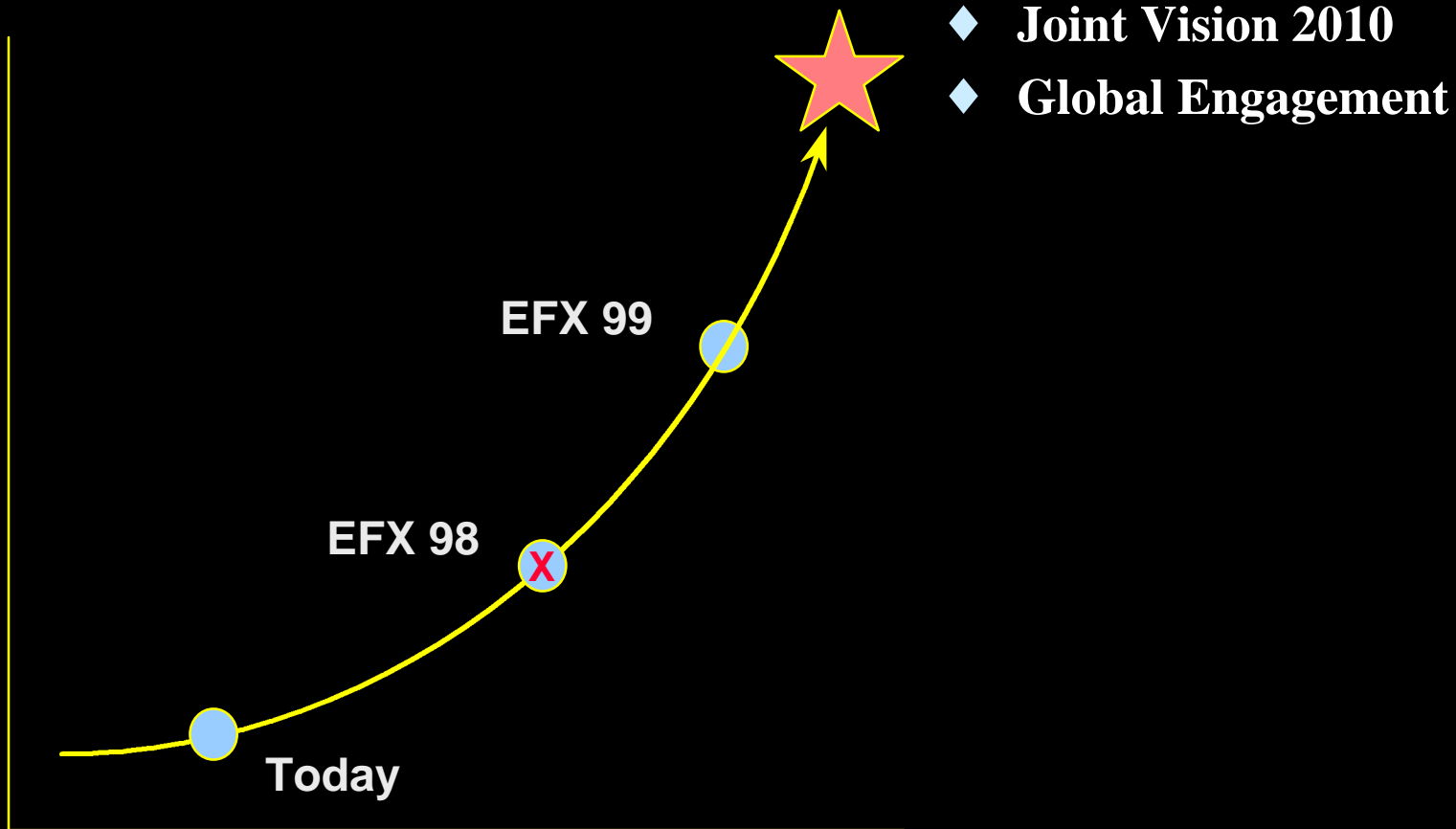
A New Acquisition Environment



EFX - A Foundation for the Future



EFX SPO





Strategy-to-Task



EFX SPO

Policy Guidance
(QDR, JV2010, GLOBAL ENGAGEMENT, etc.)

Establishes policy and force structure goals

Operational Scenario
(Decisive Halt)

Establishes broad bounds on the scale and purpose of the EFX experiments

Hypothesis
(Advanced C2 as a Multiplier)

Establishes top-level hypothesis as basis for the EFX experiments

Core Competency Premises
(Operational Capability Trials)

Establishes measurable premises to prove hypothesis and define C2 enablers

Global Attack

Precision Engagement

Integrated C2 Environment Requirements
(Global Grid, Global Awareness, DAPE)

Establishes modular builds of an integrated C2 environment for selection



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Hypothesis for EFX 98



EFX SPO

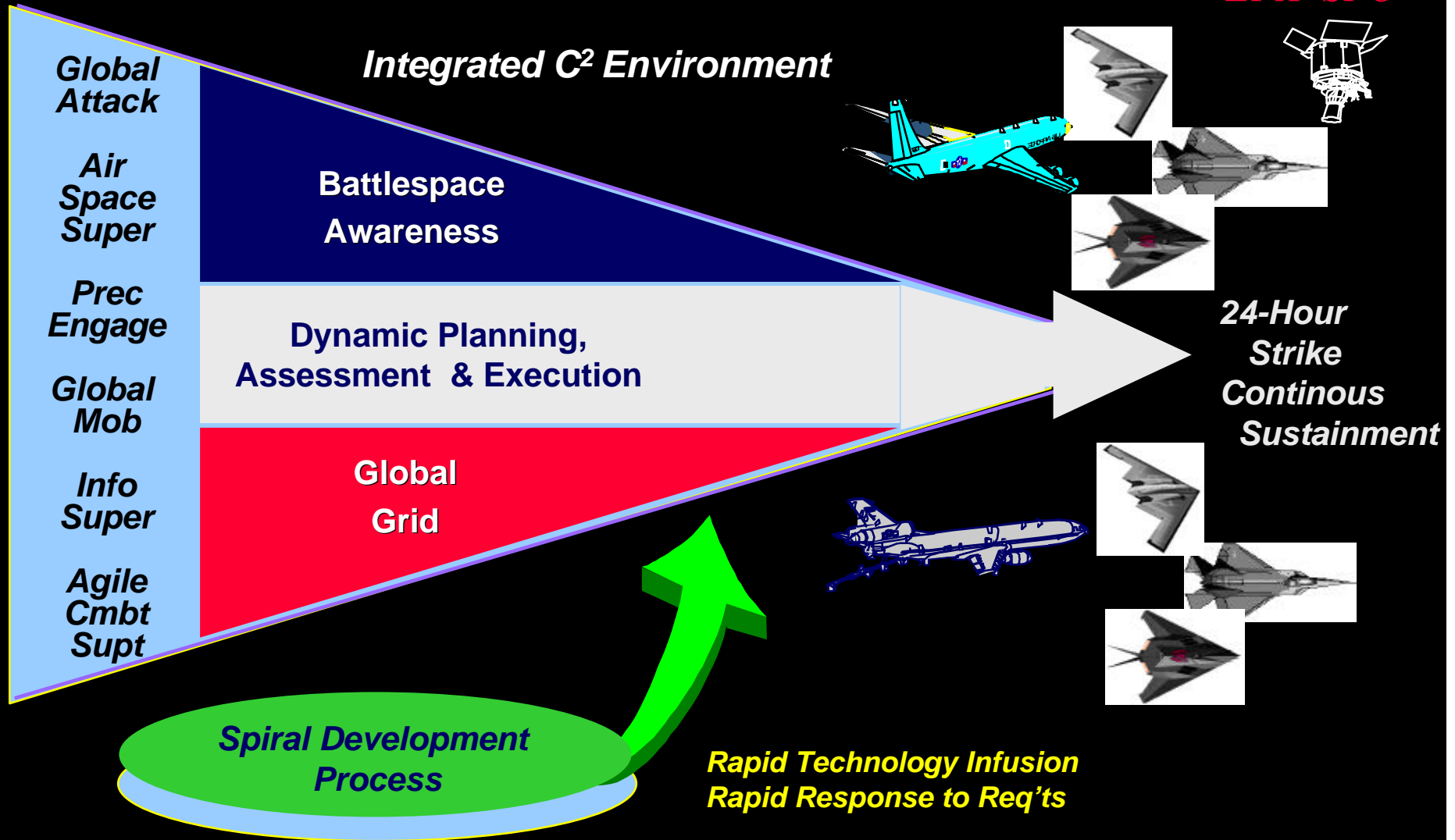
- ◆ **Hypothesis: Advanced C2 capabilities enable modern air and space forces to rapidly halt an invading force anywhere in the world--even with limited warning**
 - **Advanced C2--Concepts, People, Process and Technology Fully Integrated, Supporting/Exploiting:**
 - **Global Grid**
 - **Dynamic Assessment, Planning, & Execution**
 - **Tailored (Consistently Coherent) Situation Awareness**
 - **Rapid Halt-- < 15 days**
 - **Limited Warning-- < 48 hours**



Integrated Command and Control Enables Decisive Combat Power



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Global Attack



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Premise: CONUS based bombers can be launched with min. warning, prior to completing detailed mission planning and achieve bombs on target within 24hrs from execute order

Today:

- Serial process ATO to MP to takeoff
- No automated enroute updating
- Targets must be pre-planned

EFX 98 trial:

- Launch w/o full msn plan
- AFMSS output data linked to B-1 via UHF satcom upgrade
- IBS provides NRT situation awareness

KPP:

- Bomber response cut by 8-24 hours
- Fewer sorties required per mission
- Increased bomber survivability



Precision Engagement



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Premise: Fighter aircraft can be directed to time critical targets within <5 minutes

Today:

- Sensor assets not integrated
- Data not correlated
- Decision making not timely
- Direction/redirection to fighters not automated or sufficiently accurate

EFX 98 trial:

- Integrated national & theater sensor assets detect TCTs
- TBMCS with CIC (abn &/or gnd) with CVW and TCOP formulate decision redirection
- Global Grid & Link 16 provide managed connectivity

KPP:

- Weapon response times reduced to under 5 minutes
- Accuracy of target location and characteristics improved



Global Mobility



EFX SPO

Premise: A distributed, collaborative AOC will reduce the forward- and rear- footprints required and the time to achieve initial operational capability for an Expeditionary Force operation.

Today:

- Large, organic AOC with limited integration and distrib operation.
- 10-20 C-141s for airlift forward.
- 466-1440 personnel reqd.
- IOC in 2-3 days from movement.

EFX 98 trial:

- Deploy minimum force forward (1 C-17) while conducting ops from rear
 - Seamlessly cut over forward AOC into operations
- Disperse critical AOC functions to remote centers of expertise via comm grid, TBMCS, and CVW

KPP:

- Reduction in theater airlift sorties reqt
- Reduced force protection req'ts
- Increased speed of IOC (< 1 day)



Information Superiority



EFX SPO

Premise: Near real time situational awareness for command centers increases weapon system effectiveness and reduces number of weapon systems needed

Today:

- Situational data fragmented, not fused, and not common to all
- Data not real time & not time synchronized

EFX 98 trial:

- Sensor systems (e.g., AWACS, RJ, JSTARS) feed data to C2 centers for fusion create Tailored COP
- TBMCS & CVW allows real time decision making
- Distribution via global grid

KPP:

- Sortie effectiveness improved
- Force structure efficiency improved
- ATO efficiency increased
- Fighter survivability improved



Agile Combat Support



EFX SPO

Premise: Improved Log C2 capability will reduce time required to develop air campaign plan and employment execution of an Air Expeditionary Force.

Today:

- Standard force packages are used by deploying forces.
- Beddown planning is done on-site at time of arrival.

EFX Trial:

- Force packages tailored on the fly to reduce deployment footprint.
- Use 3-D depiction of deployed location for beddown planning.

KPP:

- Deployment footprint reduced 30%.
- Force package tailored within 24 hours
- 50% reduction in Beddown time required



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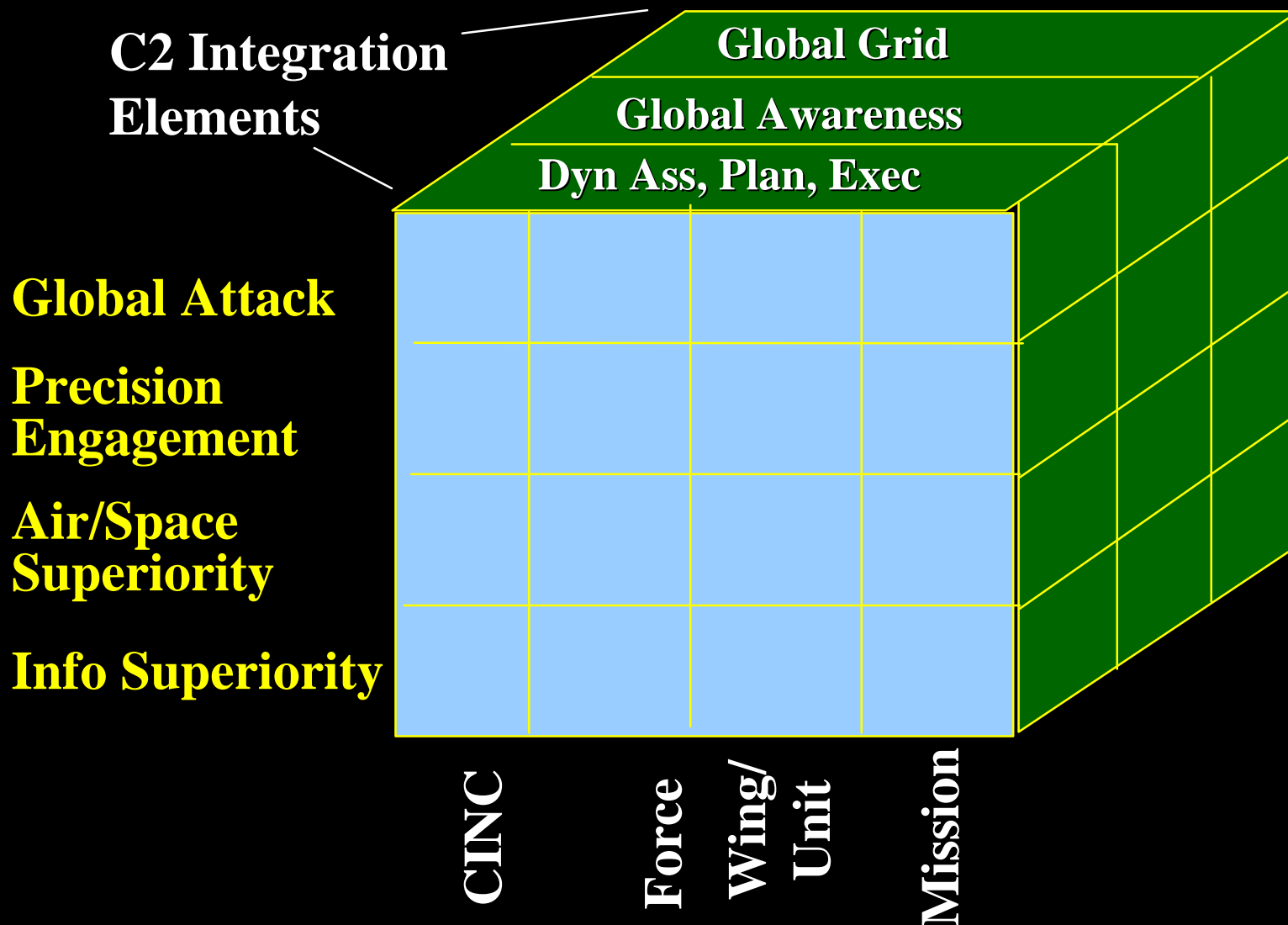


The Vision

Integrated C2 Framework



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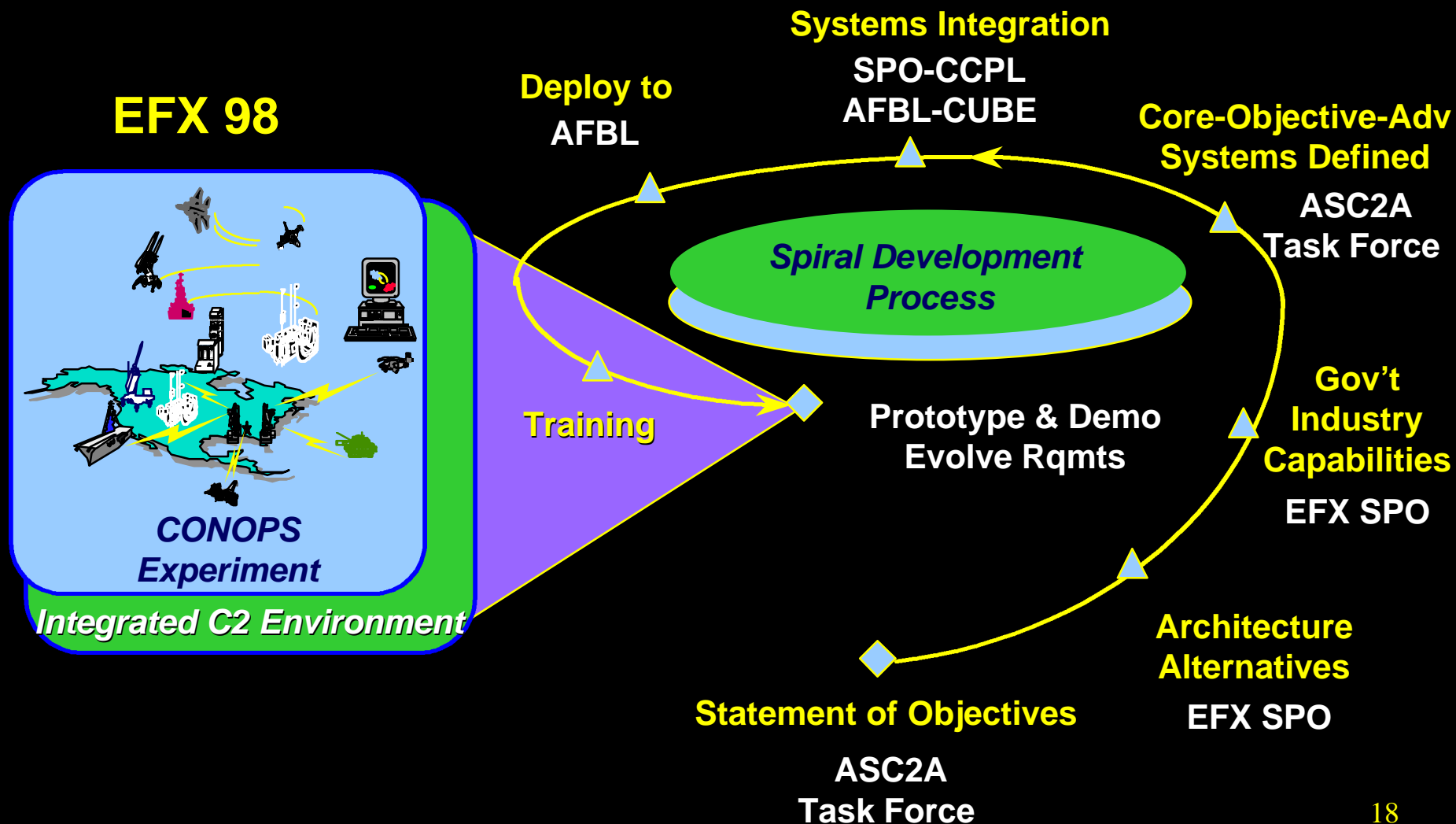


Integrated C2 Evolutionary Acquisition



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~10 months

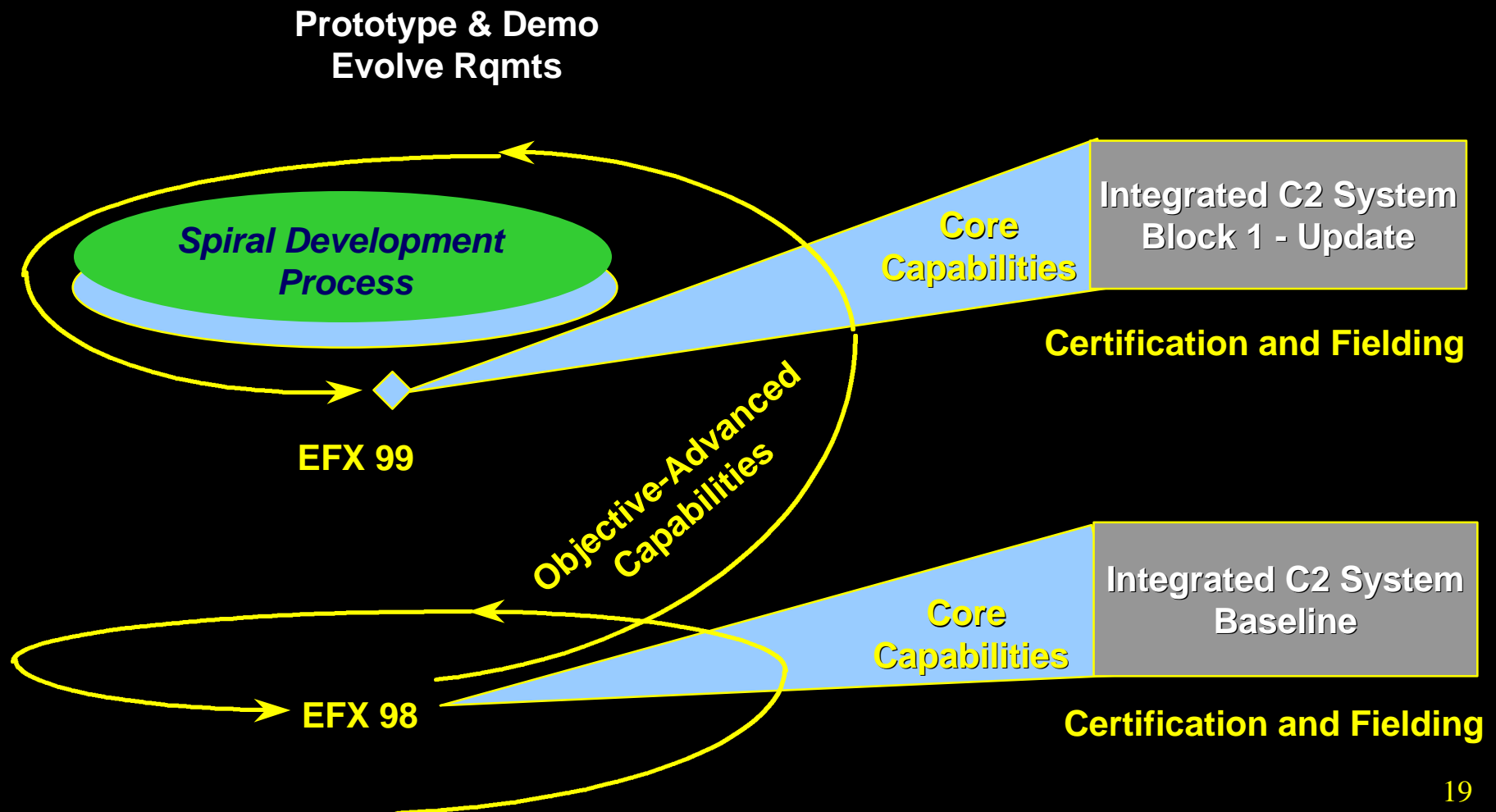




Evolutionary Acquisition



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EFX98 Global Comm Infrastructure

SIPRNET

DSN

SHF Sat

UHF Sat

GBS COP

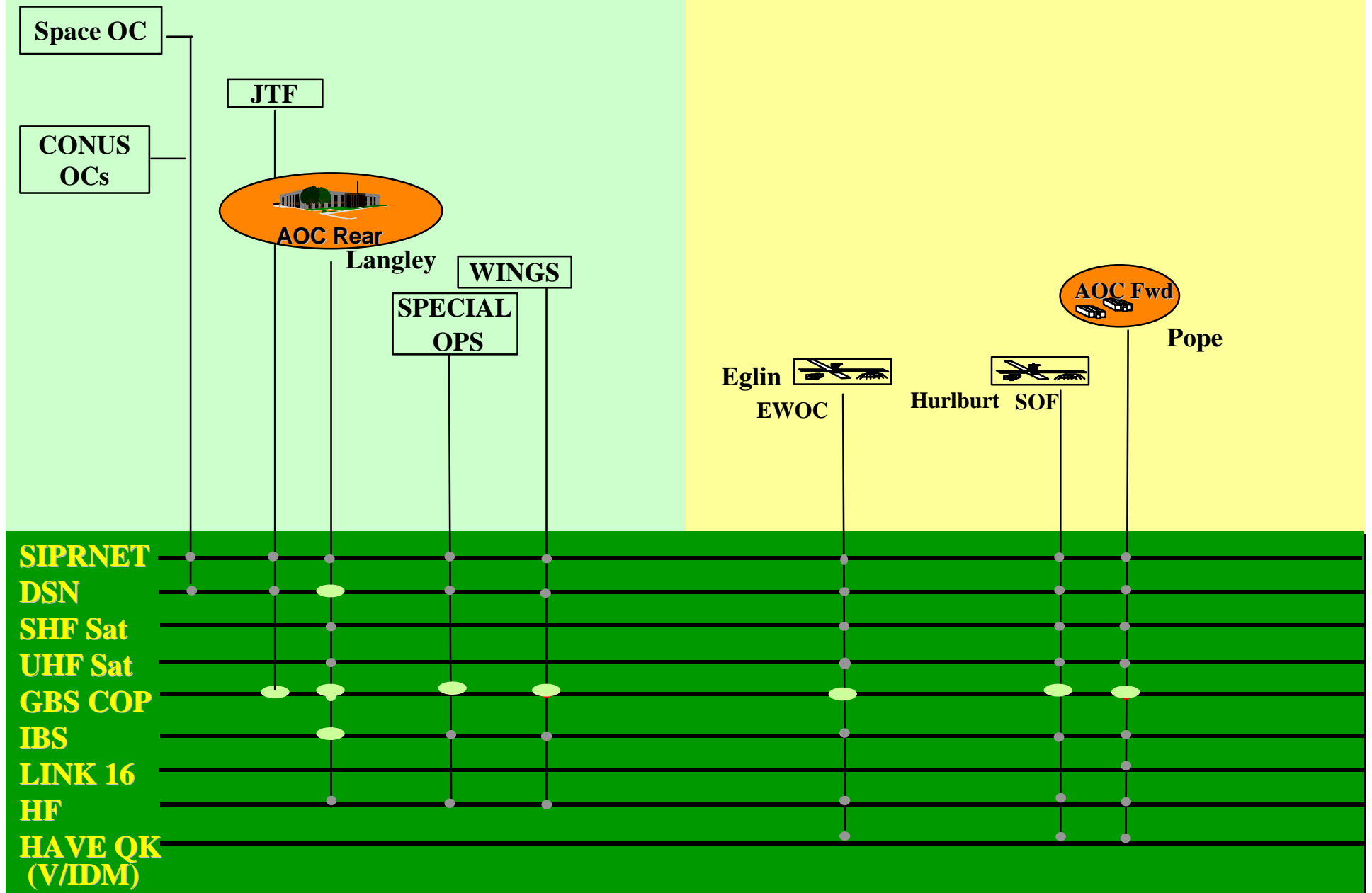
IBS

LINK 16

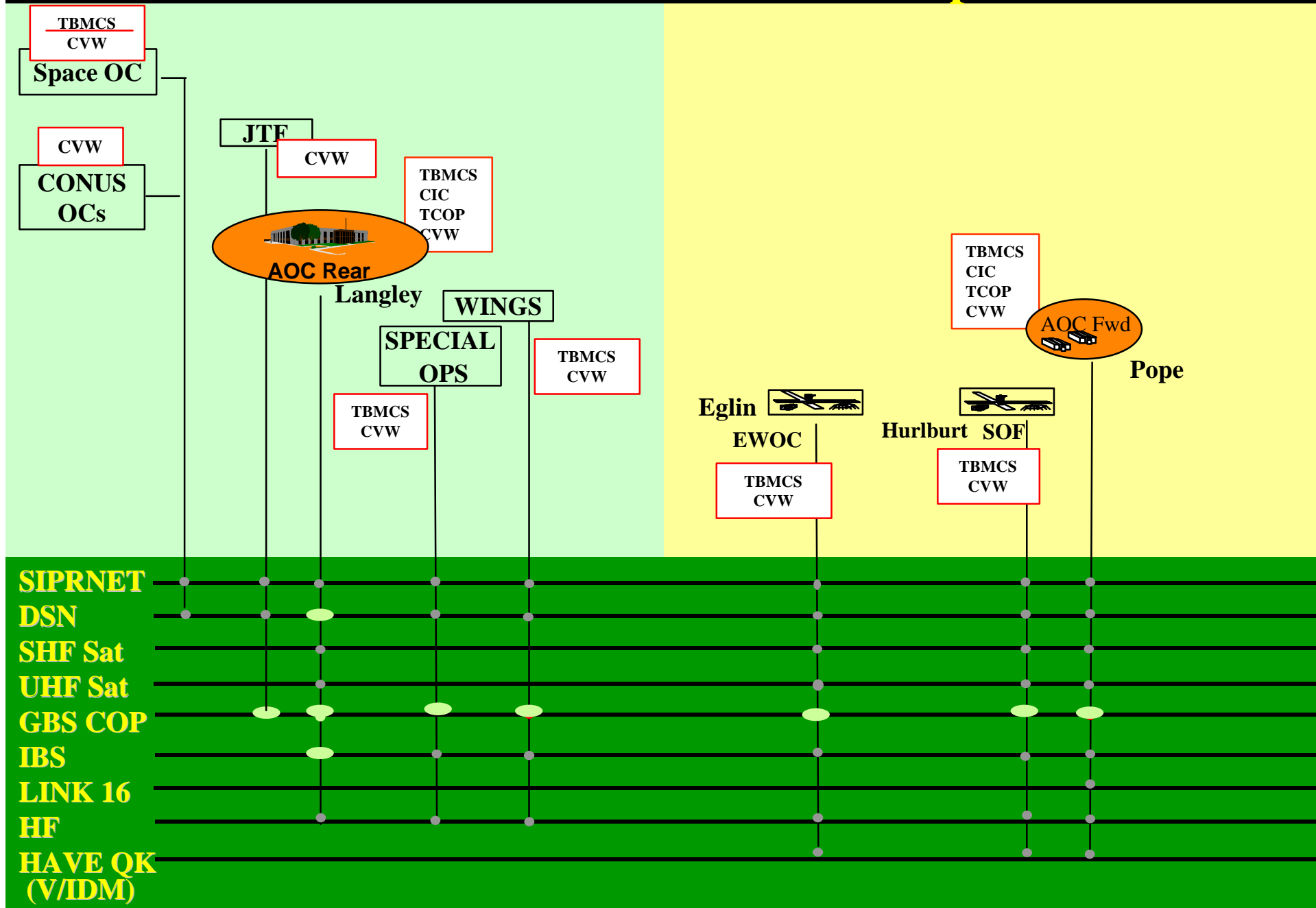
HF

**HAVE QK
(V/IDM)**

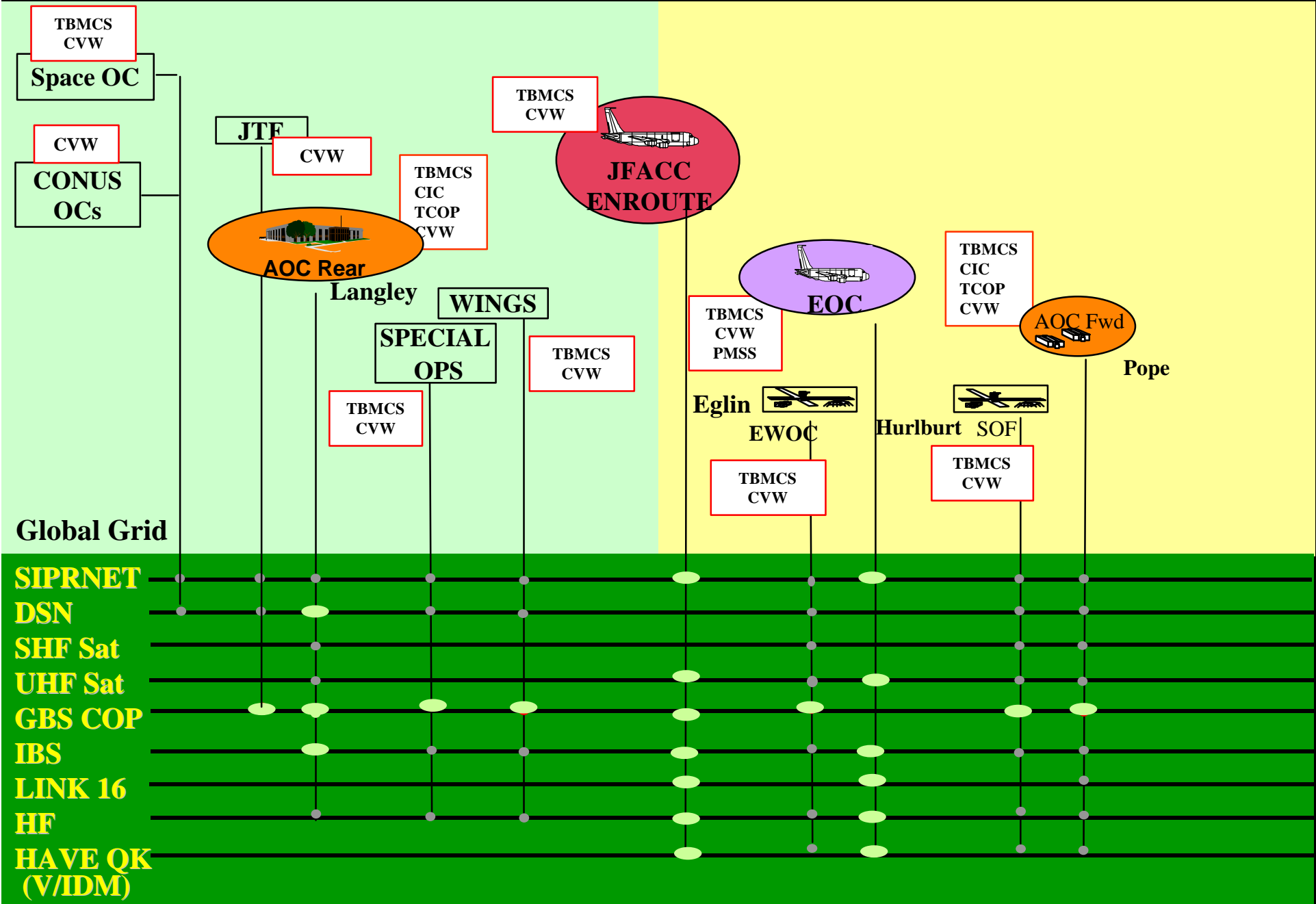
EFX98 Distributed/Collaborative Operations



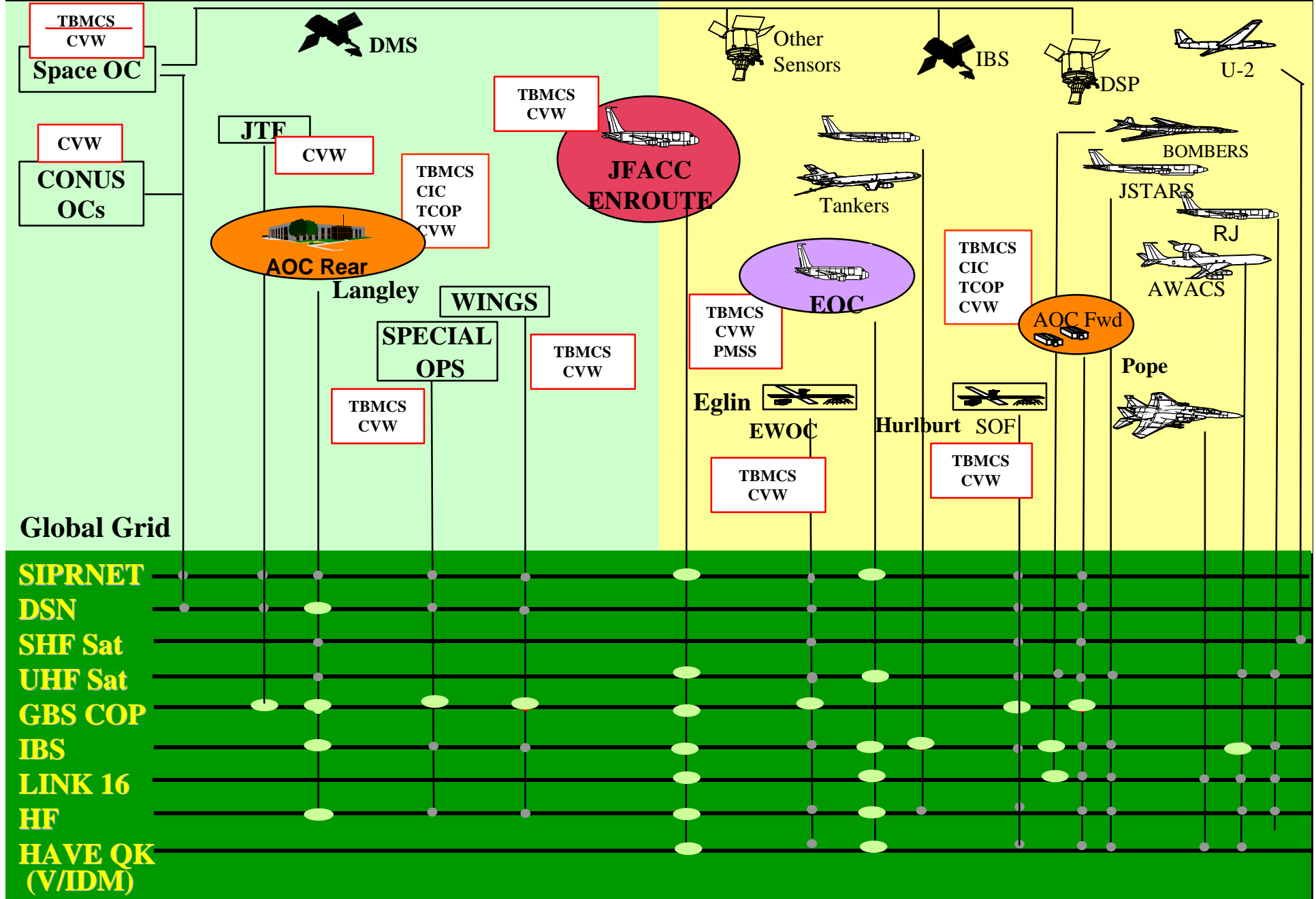
EFX98 Distributed/Collaborative Operations



EFX98 Enroute C2



EFX98 Sensor / Shooter Interfaces

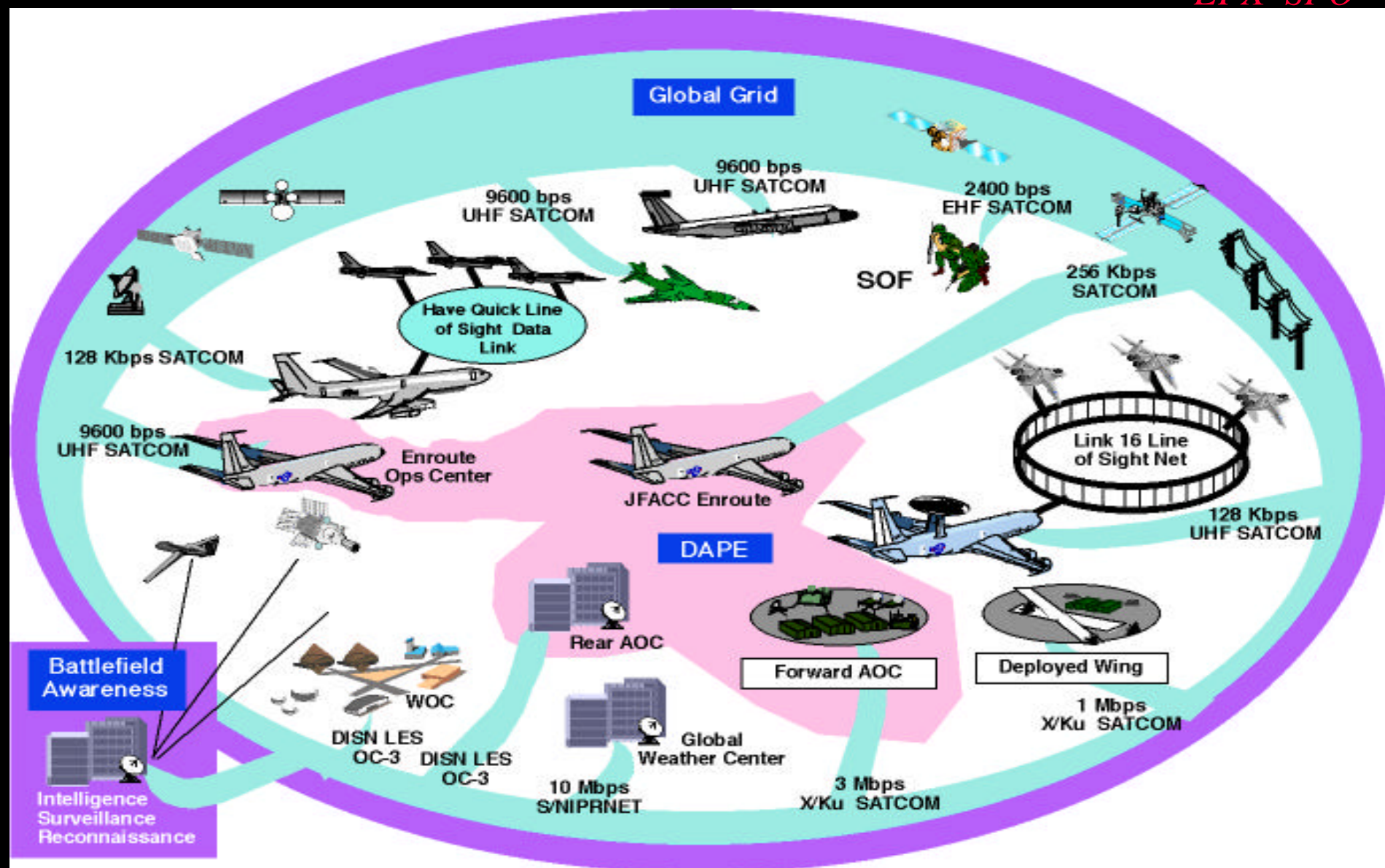




EFX 98 Integrated C2 Environment



EFX SPO

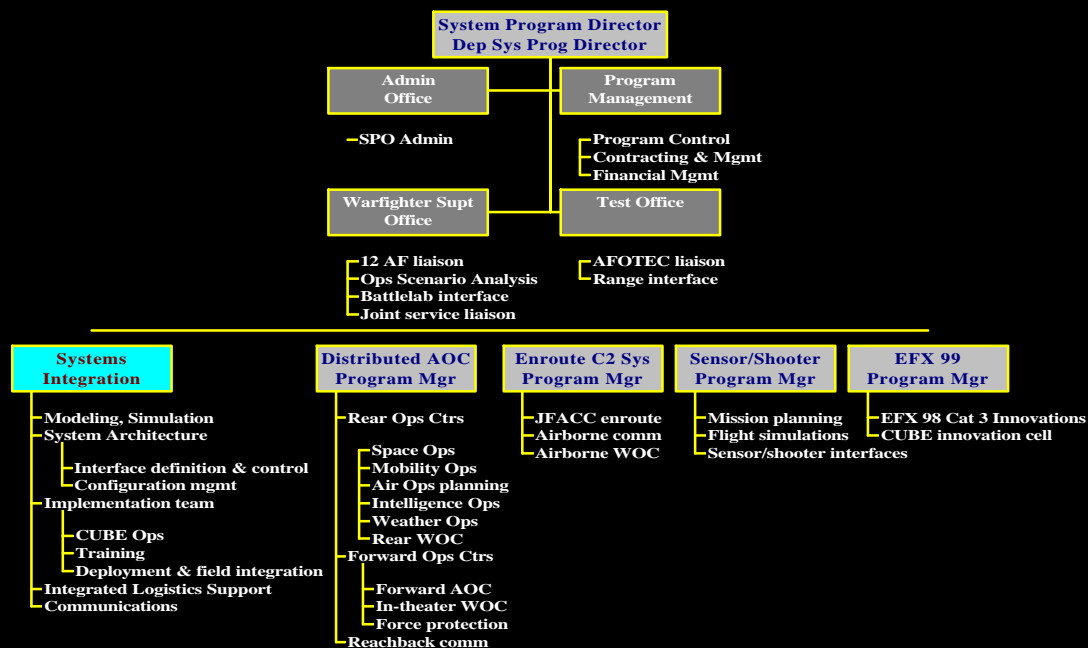




EFX SPO Organization



EFX SPO

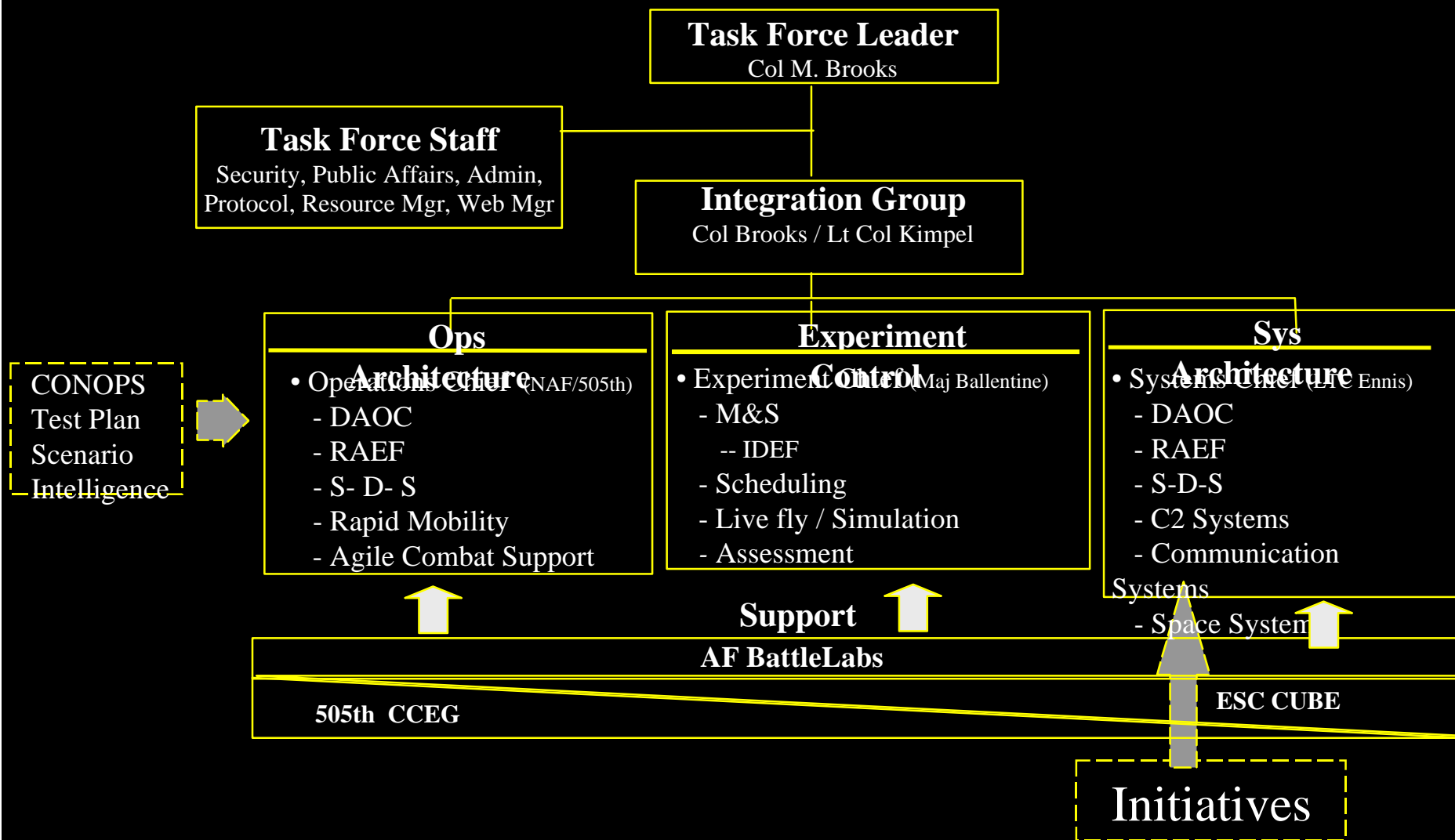




EFX Task Force Organization



EFX SPO





Summary



EFX SPO

- ◆ **AF is *fundamentally changing* its approach to command and control operations and acquisition**
- ◆ **EFX experiments with the *operational architecture***
 - **essential to implement the summit vision for the changes in C2**
 - **focuses cooperation between operators and developers**
 - **accelerates acquisition of C2 capability**
- ◆ **ESC is dedicated to full support of EFX and the integration of command and control across the AF and DoD**